

IN RE ANTHONY L. GARNERO

No. 8172

United States Court of Customs and Patent Appeals

56 C.C.P.A. 1289; 412 F.2d 276; 1969 CCPA LEXIS 297; 162 U.S.P.Q. (BNA) 221

Oral argument May 7, 1969

June 26, 1969

**PRIOR HISTORY:**

[\*\*\*1]

APPEAL from Patent Office, Serial No: 381,145

**DISPOSITION:**

Reversed.

**COUNSEL:**

Herman Hersh, McDougall, Hersh, Scott & Ladd,  
attorneys of record, for appellant. George A. Degnan, of  
counsel.

Joseph Schimmel for the Commissioner of  
Patents. Fred W. Sherling, of counsel.

**OPINION BY:**

BALDWIN

**OPINION:**

[\*\*277]

[\*1289] Before RICH, Acting Chief Judge,  
HOLTZOFF and MCLAUGHLIN, Judges, sitting by  
designation, ALMOND and BALDWIN, Associate  
Judges.

BALDWIN, Judge, delivered the opinion of the  
court:

This appeal is from the Patent Office Board of  
Appeals decision affirming the examiner's rejection of  
two claims n1 of appellant's application n2 as

unpatentable under 35 USC 103, claim 1 being rejected  
on Thomas n3 in view of Pierce n4 and claim 9 being  
rejected on the [\*1290] same combination of references  
further in view of Ford. n5 No claim has been allowed.

n1 The rejections of only claims 1 and 9 are  
pursued on appeal here.

n2 Serial No. 381,145, filed July 8, 1964, for  
"Structural Material of Expanded Minerals and  
Method for Manufacture," allegedly a  
continuation of application serial No. 714,831,  
filed February 12, 1958, for "Structural Material  
of Expanded Minerals and Method for  
Manufacturing." The parent application was  
before this court in *In re Garner*, 52 CCPA  
1370, 345 F.2d 589, 145 USPQ 457 (1965), and  
we there affirmed the rejection of claims directed  
to a method of manufacturing an expanded perlite  
structure as being obvious under 35 USC 103 in  
view of certain, different prior art cited in that  
case.

n3 U.S. Patent 2,600,812, issued June 17,  
1952.

n4 U.S. Patent 2,517,235, issued August 1,  
1950.

n5 U.S. Patent 2,691,248, issued October 12,  
1954. [\*\*\*2]

**The Invention**

The invention relates to a thermal insulation panel  
formed from expanded perlite particles. The particles are  
held together without any additional material, such as an

external bonding agent, by interfusion between the surfaces of the perlite particles. Interfusion is effected by taking the initially unexpanded perlite particles and heating them rapidly for expansion so that combined water associated with the particles is released as a vapor which operates as a flux which enables the particles to become stuck together at temperatures as low as 1400 degrees F. n6 The specification describes the product as "having a density which may vary from 1 pound per cubic foot to as much as 80 pounds per cubic foot while still maintaining a porosity and a mass integrity sufficient to enable use thereof as a structural insulation material."

n6 Thus, appellant's specification states:

Fusion believed to be necessary for adhesion occurs with the average perlite at a temperature within the range of 2000-2200 degrees F. It has been found, however, that the combined water which is released as a vapor when the perlite particles are heated to a pyroplastic state operates as a flux which enables the desired stickiness to develop for agglomeration when the particles are heated to a temperature as low as 1400 degrees F. but preferably at a temperature above 1600 degrees F. Thus agglomeration can be achieved at a temperature starting at 1400 degrees F. Best adhesions and expansions are secured when the particles are heated to a temperature above 1800 degrees F. Thus the preferred conditions for operation from the standpoint of expansion and agglomeration will reside in heating the particles to a temperature 1800-2200 degrees F. [\*\*\*3]

Claims 1 and 9 read:

1. A composite, porous, thermal insulation panel characterized by dimensional stability and structural strength consisting essentially of expanded perlite particles which are interbonded one to another by interfusion between the surfaces of the perlite particles while in a pyroplastic state to form a porous perlite panel.

9. An insulation panel as claimed in Claim 1 in which the panel is formed in cross-section with layers of different densities. [\*\*278]

#### The References

Thomas discloses a pipe insulating composition which utilizes sodium silicate as a binding agent to hold already expanded perlite particles together, with sodium chloride being used as a setting agent. A mixture of the expanded perlite, the sodium silicate binder, and the sodium chloride setting agent are subjected to a compression from 5 to 7 tons per square foot, at ambient temperature, to produce articles formed of the

composition. Prior to compression, Thomas' aggregate mixture has a density of 4 to 10 pounds per cubic foot.

[\*1291] Pierce discloses a building material utilizing expanded perlite particles which are mixed with hot hydrated lime (CaO) at a temperature [\*\*\*4] of about 300 degrees F. Pierce states that "the exterior of the granules reacts chemically to bind the entire mass together." The specification discloses that the end product may have a density of 40-50 pounds per cubic foot.

Ford discloses cellular glass pellets having a core of highly cellulated glass, an intermediate layer of less highly cellulated glass, and an outer layer of substantially uncellulated glass, thus demonstrating a panel having a cross-section of varying density.

#### The Rejection

Sustaining the examiner's rejection of claim 1 as being unpatentable over Thomas in view of pierce under 35 USC 103, the board stated:

The language used by Pierce is considered to be readable on "interbonding by interfusion" as expressed in the claims at issue. Albeit that the condition limitations appear to differ somewhat from the details of the process described by the patentees, we are apprised of no facts which would lead us to conclude that the instantly claimed product necessarily would be patentably unique when compared to that resulting from the prior art methods.

The board rejected arguments by appellant that the inclusion in the claim of the phrase "consisting essentially [\*\*\*5] of" would exclude the presence of an external binder and thus distinguish from the compositions of Thomas which uses a sodium silicate binder and that the phrase "expanded perlite particles which are interbonded one to another by interfusion between the surfaces" distinguishes from the chemical bonding of Pierce which employs lime as an additional ingredient. Instead the board noted the existence of other claims (now cancelled) adding other limitations to claim 1 and stated:

[The] recital of "consisting essentially" renders a claim open only for the inclusion of unspecified ingredients which would not materially affect the basic and novel characteristics of the product defined in the balance of the claim. \*\*\* Where, as here, other claims indicate that particular components are not excluded by the words "consisting essentially of," appellant's arguments as to the existence of diverse reaction mechanisms in the prior art processes cannot be accepted as conclusive of a factual patentable distinction in his claimed product.

56 C.C.P.A. 1289, \*; 412 F.2d 276, \*\*;  
1969 CCPA LEXIS 297, \*\*\*; 162 U.S.P.Q. (BNA) 221

The examiner's rejection of claim 9 on the ground that the feature of different densities in different layers would be an obvious modification in view of [\*\*\*6] Ford, was affirmed by the board in that:

[\*1292] Appellant has urged no patentable merit in the specific modifications set forth in claims 5 through 9, and we perceive none.

#### Opinion

On appeal the solicitor's position appears to be that they only distinction between appellant's product and the products of the prior art is the process by which appellant's product is made; and, as that process has been found to be unpatentable in our previous decision of *In re Garner*, 52 CCPA 1370, 345 F.2d 589, 145 USPQ 457 (1965), then the product claims are likewise unpatentable. The solicitor is in effect reading claim 1, which recites [\*\*279] "expanded perlite particles which are interbonded one to another by interfusion between the surfaces of the perlite particles while in a pyroplastic state to form a porous perlite panel," as a product claim containing a process limitation and then applying the rationale expressed by this court in *In re Stephens*, 52 CCPA 1409, 345 F.2d 1020, 145 USPQ 656 (1965); and *In re Dilnot*, 49 CCPA 1015, 300 F.2d 945, 133 USPQ 289 (1962).

The trouble with the solicitor's approach is that it necessarily assumes that claim 1 should be construed as a product [\*\*\*7] claim containing a process, rather than structural, limitation. However, it seems to us that the recitation of the particles as "interbonded one to another by interfusion between the surfaces of the perlite particles" is as capable of being construed as a structural limitation as "intermixed," "ground in place," "press fitted," "etched," and "welded," all of which at one time or another have been separately held capable of construction as structural, rather than process, limitations. n7 The correct inquiry therefore, it appears to us, is whether the product defined by claim 1 is patentably distinguishable over the disclosures of Thomas and Pierce in view of the structural limitation defining the panel as "consisting essentially of expanded perlite particles \*\*\* interbonded one to another by interfusion between the surfaces of the perlite particles." n8 Neither Thomas nor Pierce disclose expanded perlite

[\*1293] particles interbonded one to another by interfusion between the surfaces thereof; it is not therefore reasonable to view such interbonding to be obvious by considering the references collectively.

n7 Saxe and Levitt, Product by Process Claims and Their Current Status in Chemical Patent Office Practice, 42 JPOS 528, 536, 537 (August 1960), and cases collected thereat.

See also a recent decision of this court in *In re Steppan*, 55 CCPA 791, 394 F.2d 1013, 156 USPQ 143 (1967) in which we found that use of the term "condensation product" in a chemical claim to a product did not thereby render the claim a product-by-process claim.

n8 [I] Taking the view we do that the just recited limitation is structural in nature we do not find it necessary to consider the additional recitation "while in a pyroplastic state \* \* \*" as the mere presence of a method limitation in an article claim which is otherwise allowable would not so poison the claim as to render it unpatentable. *Ex parte Lindberg*, 157 USPQ 606 (P.O. Bd. App. 1967). [\*\*\*8]

[2] Moreover, the "consisting essentially of \* \* \*" terminology would, as the board pointed out, exclude additional unspecified ingredients which would affect the basic and novel characteristics of the product defined in the balance of the claim. However, to follow the teachings of Thomas combined in any manner with Pierce, would require the presence of at least one additional material with the expanded perlite, whether it be the sodium silicate binder of Thomas or the hydrated lime which Pierce uses to provide a chemical joining action. In either event it cannot be said that the additional ingredient would not materially affect the basic and novel characteristic of appellant's product which is that the perlite particles are held together without any additional material.

The rejections of claims 1 and 9 are therefore reversed. As to claims 1 and 9 are therefore reversed. As to claims 2 and 5-8, the other claims initially appealed but not pursued, the appeal is dismissed.

MCLAUGHLIN, J., concurs in the result.